Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-17 (cancelled)

Claim 18 (New): A method of producing an isoprenoid compound comprising culturing a microorganism in a fermentation medium, wherein said microorganism has an isoprenoid metabolic pathway having a squalene synthase gene and at least one gene for an enzyme having farnesyl phosphate as a substrate to produce an isoprenoid compound, wherein the microorganism is genetically modified to decrease the action of the squalene synthase gene and to increase the action of the enzyme having farnesyl phosphate as a substrate, whereby said isoprenoid compound is produced.

Claim 19 (New): The method of claim 18, wherein the enzyme having farnesyl phosphate as a substrate to produce an isoprenoid compound is geranylgeranyl pyrophosphate synthase and the isoprenoid compound is geranylgeranyl pyrophosphate.

Claim 20 (New): The method of claim 18, wherein the enzyme having farnesyl phosphate as a substrate to produce an isoprenoid compound is a phosphatase and the isoprenoid compound is farnesol.

Claim 21 (New): The method of claim 18, wherein said microorganism is further genetically modified to increase the action of HMG-CoA reductase.

Claim 22 (New): The method of claim 21, wherein the action of HMG-CoA reductase is increased by overexpression of HMG-CoA reductase or the catalytic domain thereof in the microorganism.

Claim 23 (New): The method of claim 22, wherein said genetic modification to increase the action of HMG-CoA reductase comprises transformation of said microorganism with a recombinant nucleic acid molecule that is integrated into the genome of said microorganism.

Claim 24 (New): The method of claim 21, wherein said microorganism is further genetically modified to overexpress a protein selected from the group consisting of acetoacetyl Co-A thiolose, HMG-CoA synthase, mevalonate kinase, phosphomevalonate kinase, phosphomevalonate decarboxylase, isopentenyl pyrophosphate isomerase, farnesyl

pyrophosphate synthase, geranylgeranyl pyrophosphate synthase, D-1-deoxyxylulose 5-phosphate synthase, and 1-deoxy-D-xylulose 5-phosphate reductoisomerase.

Claim 25 (New): The method of claim 24, wherein said genetic modification to overexpress a protein comprises transformation of said microorganism with a recombinant nucleic acid molecule encoding said protein, wherein said recombinant nucleic acid molecule is operatively linked to a transcription control sequence.

Claim 26 (New): The method of claim 24, wherein said genetic modification increases expression of a fragment of a gene encoding one of said proteins.

Claim 27 (New): The method of claim 24, wherein the microorganism has been further genetically modified to increase the activity of farnesyl pyrophosphate phosphatase.

Claim 28 (New): The method of claim 24, wherein the microorganism has been genetically modified to overexpress farnesyl pyrophosphate synthase.

Claim 29 (New): The method of claim 18, wherein said microorganism is an erg9 mutant.

Claim 30 (New): The method of claim 29, wherein said microorganism comprises a erg9Δ::HIS3 deletion/insertion allele.

Claim 31 (New): The method of claim 18, wherein said microorganism is a fungi.

Claim 32 (New): The method of claim 31, wherein said fungi is *Saccharomyces cerevisiae.*

Claim 33 (New): The method of claim 31, wherein said fungi has been genetically modified to overexpress farnesyl pyrophosphate synthase.

Claim 34 (New): The method of claim 31, wherein said fungi is a yeast and said yeast is blocked in the ergosterol pathway and is genetically modified to take up exogenous sterols under aerobic conditions.

Claim 35 (New): A method of producing an isoprenoid compound comprising culturing a microorganism in a fermentation medium, wherein said microorganism has an isoprenoid metabolic pathway having a squalene synthase gene and at least one gene for an enzyme having geranylgeranyl phosphate as a substrate to produce an isoprenoid compound, wherein the microorganism is genetically modified to decrease the action of the squalene synthase gene and to increase the action of the enzyme having geranylgeranyl phosphate as a substrate, whereby said isoprenoid compound is produced.

Claim 36 (New): The method of claim 35, wherein the enzyme having geranylgeranyl phosphate as a substrate to produce an isoprenoid compound is a phosphatase and the isoprenoid compound is geranylgeraniol.

Claim 37 (New): The method of claim 36, wherein the phosphatase is geranylgeranyl pyrophosphate phosphatase.

Claim 38 (New): The method of claim 35, wherein said microorganism is further genetically modified to decrease the action of a phosphatase having farnesyl phosphate as a substrate.

Claim 39 (New): The method of claim 35, wherein said microorganism is further genetically modified to increase the action of HMG-CoA reductase.

Claim 40 (New): The method of claim 39, wherein the action of HMG-CoA reductase is increased by overexpression of HMG-CoA reductase or the catalytic domain thereof in the microorganism.

Claim 41 (New): The method of claim 40, wherein said genetic modification to increase the action of HMG-CoA reductase comprises transformation of said microorganism with a recombinant nucleic acid molecule that is integrated into the genome of said microorganism.

Claim 42 (New): The method of claim 39, wherein said microorganism is further genetically modified to overexpress a protein selected from the group consisting of acetoacetyl Co-A thiolose, HMG-CoA synthase, mevalonate kinase, phosphomevalonate kinase, phosphomevalonate decarboxylase, isopentenyl pyrophosphate isomerase, farnesyl pyrophosphate synthase, geranylgeranyl pyrophosphate synthase, D-1-deoxyxylulose 5-phosphate synthase, and 1-deoxy-D-xylulose 5-phosphate reductoisomerase.

Claim 43 (New): The method of claim 42, wherein said genetic modification to overexpress a protein comprises transformation of said microorganism with a recombinant nucleic acid molecule encoding said protein, wherein said recombinant nucleic acid molecule is operatively linked to a transcription control sequence.

Claim 44 (New): The method of claim 42, wherein said genetic modification increases expression of a fragment of a gene encoding one of said proteins.

Claim 45 (New): The method of claim 42, wherein the microorganism has been genetically modified to overexpress farnesyl pyrophosphate synthase.

Claim 46 (New): The method of claim 42, wherein the microorganism has been genetically modified to overexpress geranylgeranyl pyrophosphate synthase.

Claim 47 (New): The method of claim 35, wherein said microorganism is an erg9 mutant.

Claim 48 (New): The method of claim 47, wherein said microorganism comprises a erg9Δ::HIS3 deletion/insertion allele.

Claim 49 (New): The method of claim 35, wherein said microorganism is a fungi.

Claim 50 (New): The method of claim 49, wherein said fungi is *Saccharomyces cerevisiae.*

Claim 51 (New): The method of claim 49, wherein said fungi has been genetically modified to overexpress farnesyl pyrophosphate synthase.

Claim 52 (New): The method of claim 49, wherein the microorganism has been genetically modified to overexpress geranylgeranyl pyrophosphate synthase.

Claim 53 (New): The method of claim 49, wherein said fungi is a yeast and said yeast is blocked in the ergosterol pathway and is genetically modified to take up exogenous sterols under aerobic conditions.